PARADYNE®

DNE4500-P and DNE4500-S

DS3 Network Extenders Installation Instructions

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Product Documentation Online

Complete documentation for Paradyne products is available at **www.paradyne.com**. Select *Support* → *Technical Manuals*.

To order a paper copy of a Paradyne document, or to speak with a sales representative, please call 1-727-530-2000.

Package Contents

⚠ HANDLING PRECAUTIONS FOR STATIC-SENSITIVE DEVICES

This product is designed to protect sensitive components from damage due to electrostatic discharge (ESD) during normal operation. When performing installation procedures, however, take proper static control precautions to prevent damage to equipment. If you are not sure of the proper static control precautions, contact your nearest sales or service representative.

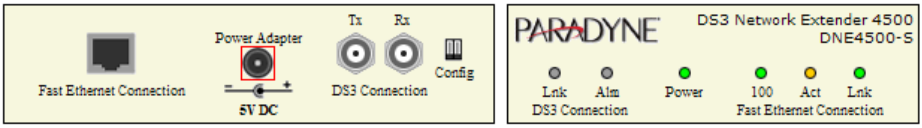
Unpack and Inspect the equipment. The following components should be included:

- 1 DNE4500
- 1 Power supply

If there is any visible damage, do not attempt to connect the device. Contact your sales or service provider.

Powering Up the DNE4500

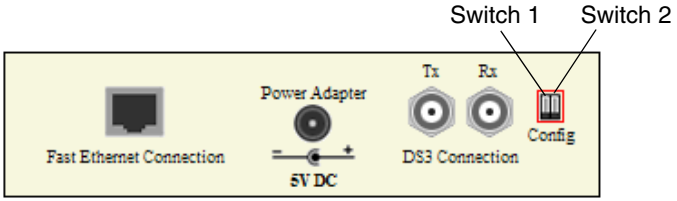
Plug the power supply into the back of the DNE4500 and connect it to the power source. Verify that the Power LED is illuminated.



The Fast Ethernet 100, Act and Lnk LEDs will remain illuminated until the DS3 link has been established.

Verifying the Switch Configuration

Ensure that the switches on the back of the DNE4500 are positioned correctly for your connection. Switches are numbered from left to right; Switch 1 is on the left and Switch 2 is on the right.



Switch 1 is not used on the subscriber unit (DNE4500-S). Clock source configuration for the DNE4500-S is determined by the switch setting on the provider unit (DNE4500-P).

Clock Source Switch Configuration

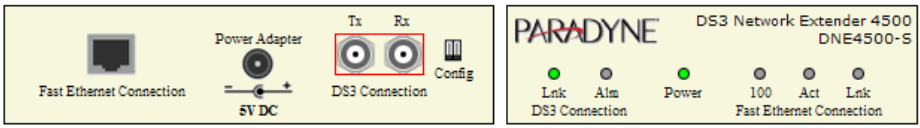
Switch 1 (DNE4500-P only)	Clock Source
Down	Local
Up	Loop

Transmit Line Buildout Switch Configuration

Switch 2	Tx Line Buildout
Down	0–255 ft.
Up	255–450 ft.

Connecting the DS3 Line

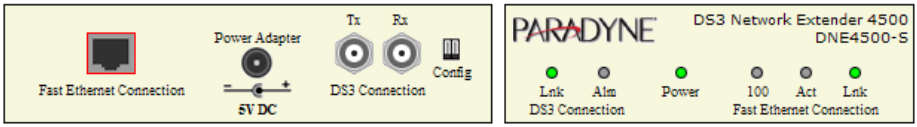
Plug the DS3 Tx and Rx cables into the corresponding DS3 connection BNC ports on the back of the DNE4500. Verify the connection: the DS3 Lnk LED will pulse once per second to indicate that the DS3 connection is established and operational.



A DS3 network extender subscriber unit (DNE4500-S) must be connected via DS3 line to a DS3 network extender provider unit (DNE4500-P or DNE4500-P-6-AC/DC). A subscriber-to-subscriber or provider-to-provider connection will not function.

Connecting the Ethernet Line

The Ethernet port is 10/100 auto-negotiating. Set your PC, hub, or switch to auto-negotiate (if applicable) before making the Ethernet connection. Plug the Ethernet cable into the Fast Ethernet RJ45 port on the back of the DNE4500. Verify the connection: solid illumination of the Fast Ethernet Lnk LED indicates an Ethernet connection has been established. If the Fast Ethernet Lnk LED is illuminated but not the Fast Ethernet 100 LED then a 10 Mbps connection has been established. If the Fast Ethernet 100 LED is also illuminated, then a 100 Mbps connection has been established.



For most applications, the DNE4500 connects to a PC using a straight-through Ethernet cable and to a hub or a switch using a crossover Ethernet cable. For any other connection combinations you must verify the pinout of the Ethernet device to which you are connecting the DNE4500 in order to determine which type of cable is required.

LED Indicators

Table 1. LED States (1 of 3)

LED	State	Indication	Additional Information
DS3 Connection Lnk	flashing green*	DS3 is operational	The DS3 connection has been established and traffic is flowing.
	solid green	DS3 link is established	A connection exists but there is indication of a problem with the DS3 line.
	no illumination	Red Alarm: The incoming connection to the unit has been lost; no data is being received.	If the outgoing connection from the unit has also been lost then the unit's partner DNE4500 will be in Red Alarm as well. Note: When a DNE4500 is in Red Alarm, the Ethernet link will be disabled and the Ethernet 100, Act and Lnk LEDs will show solid illumination.
DS3 Connection Alm	no illumination	DS3 is operational	Note: If the DS3 Lnk LED also remains unlit then the unit is in Red Alarm.
	solid amber	Yellow Alarm: The outgoing connection from the unit has been lost; no data is being transmitted.	The unit's partner DNE4500 has lost its incoming connection and is in Red Alarm. Note: When a DNE4500 is in Yellow Alarm, the Ethernet link will be disabled and the Ethernet 100, Act and Lnk LEDs will show solid illumination.
	pulsing amber	Blue Alarm: An indirect connection has been lost; unit may no longer be receiving data from its partner DNE4500.	The unit's partner DNE4500 has lost a connection with an intermediate device and is in Red or Yellow Alarm. Note: When a DNE4500 is in Blue Alarm, the Ethernet link will be disabled and the Ethernet 100, Act and Lnk LEDs will show solid illumination.

Table 1. LED States (2 of 3)

LED	State	Indication	Additional Information
Power	solid green	Unit is operational	If the Power LED is not illuminated, it is likely that the DNE4500 is not receiving power and therefore none of the LEDs will be illuminated.
Fast Ethernet 100	solid green	Fast Ethernet connection (100 Mbps) is established	If the Fast Ethernet 100 LED is illuminated, the Fast Ethernet Lnk LED will also be illuminated. Note: A solid green Fast Ethernet 100 LED can also signify a DS3 Alarm **if** the Fast Ethernet Act and Lnk LEDs show solid illumination and the DS3 Lnk LED remains unlit.
	no illumination	No Fast Ethernet connection	If the Fast Ethernet 100 LED remains unlit but the Fast Ethernet Lnk LED is illuminated then a connection has been established at 10 Mbps rather than 100 Mbps.
Fast Ethernet Act	pulsing amber	Typical Ethernet activity	Traffic is flowing without any problems.
	solid amber	Heavy traffic	Note: A solid amber Fast Ethernet Act LED can also signify a DS3 Alarm **if** the Fast Ethernet 100 and Lnk LEDs show solid illumination and the DS3 Lnk LED remains unlit.
	no illumination	No Ethernet activity	Either there is no Ethernet link or a link exists but there is no activity.

Table 1. LED States (3 of 3)

LED	State	Indication	Additional Information
Fast Ethernet Lnk	solid green	Ethernet connection is established	If the Fast Ethernet Lnk LED is illuminated but not the Fast Ethernet 100 LED then a 10 Mbps connection has been established. If the Fast Ethernet 100 LED is also illuminated, then a 100 Mbps connection has been established. Note: A solid green Fast Ethernet Lnk LED can also signify a DS3 Alarm **if** the Fast Ethernet 100 and Act LEDs show solid illumination and the DS3 Lnk LED remains unlit.
	no illumination	No Ethernet connection	The Fast Ethernet Act and 100 LEDs will remain unlit by default.

* A pulsing LED blinks steadily at a rate of once per second. A flashing LED blinks at a more rapid, less constant rate.

Fast Ethernet Connector Pinouts

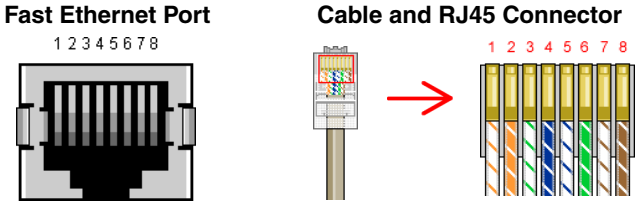


Table 2. Fast Ethernet (RJ45) Port

Pin	Connection
1	Rx+
2	Rx–
3	Tx+
4	not used
5	not used
6	Tx–
7	not used
8	not used

EMI Notices

United States – EMI Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The authority to operate this equipment is conditioned by the requirements that no modifications will be made to the equipment unless the changes or modifications are expressly approved by Paradyne Corporation.

If the equipment includes a ferrite choke or chokes, they must be installed as described in the installation instructions.

Canada – EMI Notice

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

ACTA Customer Information

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the bottom of the network extender is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. See installation instructions for details.

If the network extender causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

Warranty, Sales, and Service Information

If trouble is experienced with this equipment, please contact your local sales representative, service representative, or distributor directly for any help needed. For additional information concerning warranty, sales, service, repair, installation, documentation, training, distributor locations, or Paradyne worldwide office locations, use one of the following methods:

- Internet: Visit the Paradyne World Wide Web site at www.paradyne.com. (Be sure to register your warranty at www.paradyne.com/warranty.)
- Telephone: Call our automated system to receive current information by fax or to speak with a company representative.
  - — Within the U.S.A., call 1-800-795-8004
  - — Outside the U.S.A., call 1-727-530-2340

If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

The customer may make no repairs to the equipment.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

CE Marking

When the product is marked with the CE mark on the equipment label, a supporting Declaration of Conformity may be downloaded from the Paradyne World Wide Web site at **www.paradyne.com**. Select *Library* → *Technical Manuals* → *CE Declarations of Conformity*.

Japan Notice

Class A ITE

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This is a Class A product based on the standard of the Voluntary Control Council for interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

⚠ Important Safety Instructions

1. Read and follow all warning notices and instructions marked on the product or included in the manual.
2. Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these slots and openings must not be blocked or covered.
3. Do not allow anything to rest on the power cord and do not locate the product where persons will walk on the power cord.
4. Do not attempt to service this product yourself, as opening or removing covers may expose you to hazardous voltage or to other risks. Refer all servicing to qualified service personnel.
5. General purpose cables are used with this product for connection to the network. Special cables, which may be required by the regulatory inspection authority for the installation site, are the responsibility of the customer. Use a UL Listed, CSA certified, minimum No. 26 AWG line cord for connection to the Digital Subscriber Line (DSL) network.
6. When installed, the product must comply with the applicable Safety Standards and regulatory requirements of the country in which it is installed. If necessary, consult with the appropriate regulatory agencies and inspection authorities to ensure compliance.

7. A rare phenomenon can create a voltage potential between the earth grounds of two or more buildings. If products installed in separate buildings are interconnected, the voltage potential may cause a hazardous condition. Consult a qualified electrical consultant to determine whether or not this phenomenon exists and, if necessary, implement corrective action prior to interconnecting the products.

8. Input power to this product must be provided by one of the following: (1) a UL Listed/CSA certified power source with a Class 2 or Limited Power Source (LPS) output for use in North America, or (2) a certified power source, with a Safety Extra Low Voltage (SELV) output having a maximum of 240 VA available, for use in the country of installation.

9. In addition, since the equipment is to be used with telecommunications circuits, take the following precautions:
   - — Never install telephone wiring during a lightning storm.
   - — Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
   - — Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
   - — Use caution when installing or modifying telephone lines.
   - — Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
   - — Do not use the telephone to report a gas leak in the vicinity of the leak.

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